New Zealand Journal of Psychology, 1990, 19, 2-8

The Two Profiles of Psychology

Michael C. Corballis
University of Auckland

Scientific and professional psychology are being drawn increasingly apart. This is due in part to the drift of many scientific psychologists into the new disciplines of cognitive science and neuroscience, and in part to the decline of behaviourism, so that there is no longer a single approach uniting academic and professional psychologists. I review recent developments in the United States, including the rise of professional schools of psychology, and the split of scientific psychologists from the American Psychological Association to form a new association, the American Psychological Society. I suggest that the time may be ripe for a restructuring of psychology within our own universities, including the establishment of professional programmes that might draw on resources beyond those available in traditional Departments of Psychology.

In 1960, when I was a student in a psychology laboratory at Victoria University, the class was asked to complete a test called the Allport-Vernon-Lindzey Scale of Values. This test, which now seems to be largely forgotten, is based on the ideas of the German philosopher Eduard Spranger, and reveals a person's profile of scores on six supposedly fundamental values, described as *theoretical, economic, aesthetic, social, political,* and *religious.* After scoring the test, we plotted our scores on graph paper. Each of us was thereby reduced to a sort of mountain range in profile, with peaks and troughs representing the ways in which our values were ordered. The instructor wandered about the room giving help where needed, and happened to spot my profile alongside that of the young woman sitting next to me. In amazement he held the two graphs side by side for the class to see, for they were perfect mirror images of each other. Mine was jagged with promontories at theoretical and aesthetic values, precisely where the valleys lay on hers, while hers revealed a mountainous concern with social and religious values.

I do not remember the young woman's name or what became of her, although she is probably now a *real* psychologist, helping people and making the world a better place. I also like to think I am not quite so polarized in my outlook these days, and that my profile might now reveal rolling hills and gentle valleys rather than the precipitous crags and canyons of my youth. Even so, I have often been haunted by those two profiles, since they seem to capture a good deal of the nature, and indeed the conflicts, of modern psychology. The profiles might be termed the yin and yang, or dare I say the left and right hemispheres, of psychology. I like to think that somewhere else in that class of 1960 there was another immaculate pairing, but with the genders reversed.

Where We Came From

In most universities in the Western world, including New Zealand, psychology grew out of philosophy. The basic concern was, and largely still is, with the nature of the human mind — with how we learn, remember, perceive, think, and feel. At the broadest level, the questions are those that people have asked since they pondered their own condition: What is mind? What is consciousness? What is language? How do we know and perceive the world? They are not only the questions of the psychological laboratory, they are also the questions that have occupied philosophers since the time of the ancients.

For much of our intellectual history, these questions have been essentially armchair questions, but they are now beginning to loom larger in scientific laboratories. It might be said that the most fundamental questions of science and philosophy have to do with *matter, life* and *mind.* Over the past two centuries science has expanded to encompass, not just the first of these, but also the second and increasingly the third. It would be nice to think that psychology, having only recently emerged as a science, was responsible for the final step to the scientific study of the mind, but in recent years technology seems to have moved in on the scene at least partly independently of psychologists. Nevertheless many psychologists have been quick to embrace the new technologies, and even philosophers have scurried to rejoin the action.

The Technological Invasion

The Computer Revolution

One reason for the technological invasion is the remarkable development of the digital computer over the past three decades. People have often been tempted to believe that their toys can think, and have used them as metaphors for the human mind. In the seventeenth century, for example, Descartes (1649/1978) was much intrigued by clockwork models of animals, and wondered if it might be possible ever to construct a mechanical replica of a human being. He concluded that one might simulate an animal, even a chimpanzee, but never a human being, since the human mind transcended any mechanical principles. However Descartes' concern was essentially the same as that of the modern scientist who asks if the human mind might be simulated on a digital computer. But the difference is that the enterprise is now a practical one. Artificial intelligence is the science of creating intelligence, often in deliberate imitation of human intelligence, on a digital computer.

Large sums of money are poured into this research, for reasons that are as much practical as philosophical. If we can create computers that think for us, we can devote more time to other more leisurely pursuits, and of course when things go wrong we can blame the computer. Readers should not be alarmed, however, since the attempt to simulate the human mind on computers has raised many more problems than it has solved, and even the most sophisticated computers cannot yet do things the average five-year-old can do without effort, such as understand a spoken sentence or look out the window to see what is going on. It is an odd paradox that computers are quite good at some activities that seem on the surface to be much more difficult, such as playing chess or giving psychotherapy.

Although the science of artificial intelligence was initially dominated by computer scientists, some of the issues it raises are the classic ones of psychology and philosophy. The field is now a thoroughly interdisciplinary one, renamed "cognitive science." It consists of computer scientists, psychologists, philosophers, linguists, and biologists, among others, all collaborating in an assault on what is perhaps science's last frontier, the human mind. University Departments of Cognitive Science are starting to emerge, especially in North America and Europe.

Cognitive science does raise questions that are as much philosophical as technical. For example, one test of a theory of mind is whether it can be simulated on a computer, and this raises the question of whether a computer itself can be said to think, feel, or be conscious (see, for example, the article by Searle, 1980, and ensuing commentaries). The question may sound silly, but everyone who has worked at a computer terminal and received instruction or reproof from the intelligence lurking within does get some inkling of a real and often formidable mind at work. Similarly, the famous programme ELIZA that simulates a psychiatrist giving therapy does induce the uncanny feeling that one is dealing with a person, not a machine (Weizenbaum, 1966). It is interesting to reflect that, at one time, humans were thought to be distinguished from animals by their rationality, with animals guided by emotion rather than reason. Now that computers have surpassed humans as logical devices, humans are often distinguished from them in terms of emotionality. As Turkle (1984) puts it, "Where once we were rational animals, we are now feeling computers, emotional machines [p. 313]."

Neuroscience

The other great technical intrusion into the science of the mind has come from that emergent discipline known as "neuroscience". There are surely few remaining doubts that the key to the mind is the brain, and there are now a host of clever methods for observing the brain at work. These include implanting electrodes to record the activity of single brain cells, or indeed of groups of cells, inserting chemicals or even pieces of brain tissue into parts of the brain and observing the effects, removing parts of the brain by increasingly sophisticated methods, using computerized imaging techniques to monitor patterns of blood flow or electrical activity in the brain. Through a magical technique known as magnetic resonance imaging (not yet available in New Zealand), it is possible to obtain remarkably sharp pictures of the anatomy of the brain without delving inside the skull at all. Some of this work is carried out on animals, some in conjunction with the diagnosis and treatment of brain disorders in humans.

Neuroscience also developed largely independently of psychology or philosophy, but again the psychological and philosophical implications are irresistible. There is even a new movement known as neurophilosophy (Churchland, 1985), which

seeks to reduce the great philosophical questions of mind to neurophysiological terms (and sadly leaving out much of psychology — see Corballis, 1988). Neuropsychology has a slightly longer tradition, and is thriving both as an academic and as a clinical discipline. It has also joined forces with cognitive science, and the booming Society for Neuroscience now has a subsection called cognitive neuroscience. There is no doubt that the emphasis on neuroscience will intensify since the United States President, George Bush, declared the 1990s the "decade of the brain."

Psychology's Popular Image

All of this is heady stuff, if I may be excused the expression, but while it looms large in the think tanks of Oxford or Boston it has not really caught the public imagination. Psychology to the person in the street is a different specimen altogether. It has to do with people's problems and hang-ups. To respectable folk it often seems to involve an element of quackery. People associate psychology with the name of Sigmund Freud, although that name crops up only rarely (though legitimately) in psychology courses taught at our universities. Psychologists are frequently confused with psychiatrists, to the annoyance of both. I confess that my heart sinks when people ask me what I do and I have to reveal that I am a psychologist. Often there is an immediate distancing, as though it is assumed that I am possessed of the special power to read minds or else that I am slightly crazy. Either way, it takes time and effort to overcome the stereotype and explain what it is that I really do. The problem is not unique to me. On a recent leave, I encountered several colleagues who have, with relief, discarded the name "psychologist" and now refer to themselves as "cognitive scientists." The popular image of psychology is due largely to the distorting influence of the media, or to the peculiar assemblage of books that masquerade as "psychology" in bookshops, especially at airports.

I must say at once that clinical psychology is an entirely respectable branch of psychology, often cruelly caricatured by the media or by unscrupulous people who masquerade as therapists of one sort or another. It is to be hoped that the Psychologists Registration Act will serve to differentiate those who are and are not qualified to give psychological treatment.

Let me recall now my mirror image, the young woman of 1960 whose profile of values so neatly complemented my own. This is the side of psychology that has to do with helping people, and it is motivated by humanitarian rather than scientific concerns. It is also the side of psychology that attracts most public interest. In universities all over the world psychology is immensely popular among students — possibly the most popular subject in the entire university curriculum. At the University of Auckland, students are turned away at all levels except third year, where the number are at least partly controlled by the pruning at first and second years. At the University of Padua, in Northern Italy, where I have recently spent part of my research and study leave, there are some 10,000 students of psychology, among a total of about 50,000 students. I am told there are more than 150 professors of psychology (in the sense that the Americans use the word "professor"; the equivalent in New Zealand would be lecturers and above).

The great majority of students in psychology have not enrolled to learn about the science of the mind. They want *clinical* psychology. They want to understand their own problems, or those of their friends, children, or parents. Those who plan to graduate in psychology want, on the whole, to become therapists, social workers, counsellors, healers of the mentally ill. These are admirable ambitions, but university Departments of Psychology cannot really cope with the extent of the demand. The University of Auckland operates one of the country's largest postgraduate programmes in clinical psychology, and it can accept only eight students per year. There are well over 100 times that number trying every year to get into first-year psychology, most of them mainly interested in clinical psychology.

Universities in other parts of the world deal with this problem in varying ways. The prestigious universities, such as Oxford, Harvard, or Stanford, ignore it and continue to offer psychology primarily as pure experimental science. The Department of Psychology at the Massachusetts Institute of Technology recently changed its name to the Department of Brain and Cognitive Sciences, reflecting precisely the developments I described earlier. At the University of Cambridge, in England, the Department of Experimental Psychology has succumbed to pressure to the extent of offering a restricted masters degree in clinical psychology, but this is a one-year programme only, and provides only the academic aspect. In order to qualify as clinical practitioners, students must then complete two further

years of clinical work, for which the university assumes no responsibility.

In our own universities there is an uneasy tension between the predominantly academic make-up of the staff and the predominantly clinical interests of the students. The large introductory courses include a fair sampling of material from clinical psychology, but students are often disappointed to find that this is not followed up in second year, and they may have to wait for third year, masters, or if they are lucky, for the postgraduate diploma course in clinical psychology before they find what they are looking for. I suspect however that the teaching of "hard-core" scientific psychology, including statistics and quantitative techniques, is in many cases watered down and sweetened so as not to frighten students away. Psychology is in the difficult position that it must maintain large enrolments in order to attract funds, but the funds themselves are needed primarily for research laboratories, which most students are not particularly interested in, and for the intensive teaching of clinical students, who constitute only a tiny minority of the student roll.

Now it might be objected that I have portrayed scientific and clinical psychology as though they were somehow antithetical to one another. Much of our mission in teaching psychology has been that the two sides of psychology need each other, and more particularly that clinical psychology cannot be effective unless practitioners also know and use the science of psychology. There is an increasing sense, however, that this argument is wearing thin, and that psychology stands in danger of being torn apart. For some documentation of this rift, it is worth briefly examining the recent history of psychology in the United States, for it is there that both academic and professional psychology have the strongest hold.

The "Scientist-Practitioner Model"

In August 1949, shortly after the end of World War II when there was a strong need for improved services in mental health, psychologists in the United States gathered at a conference in Boulder, Colorado, to consider the training of professional psychologists. This group formulated the so-called "scientist-practitioner model" for clinical psychology. In essence, this established the principle that clinical psychologists must be trained in research as much as in clinical skills. A person with a psychological disorder — a "client," as such a person would now be called (in an ugly conformity to the monetarist age) — is treated as though a scientific problem; therapy is an experiment, to be tested empirically and modified if found not to work. Consequently, clinical psychologists are trained in scientific method, and taught forms of therapy and diagnosis that are systematic, objective, and self-correcting.

The Boulder conference also established the PhD degree as the minimum qualification for the independent, unsupervised practice of professional psychology. This ensured that psychologists were trained in research, since the PhD degree is fundamentally a research degree. In North America, however, the PhD programme for clinicians is augmented with supervised practicums in clinical settings that ensure the development of clinical skills and experience. This means that the degree takes four or five postgraduate years to complete, instead of the two or three required for a normal PhD. The PhD requirement incidentally also allowed clinicians to refer to themselves as "doctors," which no doubt helped enhance the status of the psychologist roughly to that of the medical practitioner.

Subsequent gatherings in 1955, 1958, and 1965 reaffirmed the faith of American clinical psychologists in the scientist-practitioner model, while also reflecting some changes in the perceived roles of psychologists in the community. Things began to go awry, however, at a conference held in Vail, Colorado in 1973. Delegates at that conference could not agree on the scientist-practitioner model, and emphasis was shifted to the provision of lower-cost mental-health services to poorer people, who were considered more in need than the more traditional middle-class clientele. It was suggested that the PhD was not necessary, and that a Master's degree was enough. While the aim of redirecting services to those in greatest need was surely an admirable one, the idea that this requires a lesser qualification seems, at least in retrospect, to smack of condescension.

In any event, the recommendation that a Master's degree was sufficient was rejected by a subsequent vote of the members of the American Psychological Association, but the damage was done. One consequence was the emergence of "free-standing" schools of Professional Psychology that were independent of universities or academic Departments of Psychology. These schools offered a new degree, called Doctor of Psychology (PsyD), in which there was often little or no component of research. This development has

contributed to the growing separation of academic and professional psychology, although academics have also contributed their share by joining the "big science" bandwagons of cognitive science and neuroscience, and neglecting the professional side of their discipline.

Very recently, there have been two further developments, one positive and one negative. In June 1987 there was yet another conference to determine the future of graduate education in professional psychology. This conference reasserted the scientist-practitioner model, and confirmed the doctoral degree as the minimum qualification for the independent professional. It should be said, too, that some PsyD programmes do meet the required standard of research and clinical training, at least as established by the American Psychological Association.

Despite this resolve to keep the two sides of psychology together, the American Psychological Association is itself at a crisis point. With the extraordinary growth of psychology as a profession in the United States, the Association has become increasingly dominated by professionals, so that academics and scientists have become alienated and their numbers and influence have declined. A great many have simply left to join other organizations, such as the burgeoning Society for Neuroscience, while those who have remained have become concerned that the rather hefty fees go largely toward professional issues rather than scientific ones. Matters came to a head in 1988, when members of the Association failed to give the necessary majority to a compromise plan than might have satisfied both the professionals and the academics. As a result, there is now a breakaway society, called the American Psychological Society, that consists mainly of academics and scientists.

Something of the sort has happened before, with the formation some years ago of the Psychonomic Society, so the whole affair may turn out to be a storm in a teacup. Nevertheless, I cannot help feeling that the division between academics and professionals has reached a fission point, and it will take considerable effort and negotiation to bring them together again.

Of course the state of affairs in New Zealand is not quite like that in the United States. To become a registered psychologist here, a PhD is not necessary; it is sufficient to hold a masters degree in psychology and complete one more year of supervised clinical practice, or a bachelor's degree with honours and two years of supervised practice. An alternative and more effective route is to complete a Diploma of Clinical Psychology (or its equivalent), provided of course that one is accepted for the course. There is therefore not quite the emphasis on research that there is in the United States, although the diploma programmes in our universities for the most part do emphasize the scientist-practitioner model, and insist on a good training in research as well as in diagnostic and therapeutic techniques. Moreover there is not yet the enticement in this country for academic psychologists to become involved in interdisciplinary programmes in cognitive science or neuroscience, although the signs are there.

Even so, the tensions that exist in American psychology also exist here, and indeed in Europe and Australia. Like it or not, we import a good deal of our psychological theory and practice from North America. Moreover the conflict of interest between academics and professionals is often a real one. Practising clinicians must often wonder why they spent so much time learning academic psychology that rapidly became obsolete, or research methods that they never in fact use. Conversely, research psychologists often develop techniques that apply to the laboratory, but not to clinical problems. The gap is often rationalized in much the same way that the teaching of Latin used to be justified; that is, the teaching of academic psychology is held to provide a way of thinking and reasoning, rather than a set of specific facts or methods. Up to a point, I think this is a legitimate argument, but with the growing fragmentation of knowledge, in psychology as elsewhere, one wonders how far it can be sustained.

The Decline of Behaviourism

There may be another factor underlying the loss of confidence in the scientist-practitioner model. This model owes much to the influence of behaviourism, which was the dominant school of 20th-century Western psychology up until about the 1970s. That is, the idea that therapeutic interventions should be objectively framed and assessed is a fundamentally behaviourist one. Since the late 1950s, the behaviourist philosophy has been in decline in academic psychology, and many large Departments of Psychology now have no members of staff at all who would admit to being behaviourists. This is due at least in part to the so-called cognitive revolution, as well as to the growth of neuroscience.

However neither cognitive science nor neu-

roscience has succeeded in addressing *clinical* questions as successfully as behaviourism did — so long as behaviourism ruled, both clinicians and academics could share a common philosophy. Moreover cognitive psychology has been roundly criticized for its failure to address the major practical problems of our times, and compared unfavourably with behaviourism and depth psychology in this respect (Neisser, 1976). In fact, cognitive science does have important applications, but these generally lie outside the realm of clinical practice; instead, they have to do with such areas as ergonomics, expert systems, artificial intelligence, and practical aspects of memory and attention. The fashion for cognitive science has had some impact on the *terms* that are sometimes used in clinical practice, but this impact is superficial. For example, the development of so-called cognitive therapy seems to me to owe little to mainstream cognitive psychology, and the technique known as neurolinguistic programming owes nothing to neurolinguistics or to programming, but merely capitalizes on the current cognitive science jargon. (The word "cognitive" has infiltrated as insidiously as the word "behaviour" once did, and it too will have its day.)

Similarly, the neuroscience boom may seem largely irrelevant to the everyday concerns of the practising clinician, although it can be argued of course that a knowledge of neuropsychology, drug action, and the neurochemical bases of mental disorders is necessary in at least some clinical contexts. But this raises the question of the distinction between psychology and medical practice. Psychologists interested in neuroscience work increasingly in medical settings, in Departments of Psychiatry, Physiology, Pharmacology, Neurology, and so on, and this trend will undoubtedly increase as we move into the "decade of the brain." However clinical psychologists remain reluctant, on the whole, to embrace the "medical model" — except perhaps in the realm of clinical neuropsychology — and I think that this may be contributing to the growing tension between research psychology and clinical psychology.

I do not mean to imply that behaviourism has no place in clinical psychology. It does have a place, and the teaching of applied behavioural techniques is one of the genuinely useful contributions an academic Department of Psychology can still make to the training of clinicians. But even the decline of behaviourism has had some positive effects on the teaching of clinical psychology. For example, there has been a revival of interest in depth psychology, with its emphasis on covert processes that lurk beneath the surface of objective behaviour — and this is one area in which cognitive psychology can make a contribution, especially with the growth of interest in unconscious influences on thought (e.g., Kihlstrom, 1987). Modern clinical psychologists may also be more aware of the importance of social and cultural factors. The behaviourist approach made little provision for the differences between rats, pigeons, and college students, let alone between different ethnic or cultural groups.

But with the general decline of the "scientist-practitioner model," it is often felt that sheer experience in clinical settings is more important than research training in the practice of psychology. Taken to its extreme, this suggests that clinical psychology might revert to an apprenticeship model, with clinicians simply learning on the job. To some extent, the emergence of free-standing professional schools, independent of universities, reflects the trend in this direction.

Where Do We Go From Here?

In many universities, psychology is simply falling apart. As I have already noted, some prestigious Departments of Psychology that do not offer clinical training have changed their names. And of course psychologists have long been employed in different Departments — Education, Management Studies, Psychiatry, and so on, and the trend will continue with the establishment of new Departments of Cognitive Science and Neuroscience. All of this leaves one wondering what will happen to clinical psychology.

One answer might be a continuing trend toward professional schools of psychology, independent of Departments of Psychology. But if this means that professional psychology is cut off from the *university*, then my guess is that it stands only to lose, in effectiveness, credibility, and prestige. The alternative is to set up a professional school within the university, and to draw on those resources that are of most relevance to clinical training. One model of this approach is provided by the University of California at Irvine. This campus has no Department of Psychology, and academic psychology is taught in two departments — the Department of Psychobiology, which is in the School of Biological Sciences, and the Department of Cognitive Science,

which is in the School of Social Sciences. Neither of these Departments offers professional training. There is, however, a Program in Social Ecology that offers a professional degree and that includes faculty specialized in psychology, urban sociology, criminology, environmental health science, and law.

A professional training in "social ecology" is not of course the only model for clinical psychology, and graduates of the program at Irvine are presumably qualified for work in social contexts rather than for dealing with individual clients. However my point is that, as the rift between academic and clinical psychology widens, we might well be advised to decide what kinds of professionals we need, how they should be trained, and what university resources are needed for that training. My guess is that a good deal of modern academic psychology is still relevant to clinical training, but that there are other areas that are equally important. Clinicians working with organic disorders probably need to know more anatomy, physiology, and pharmacology than the average Department of Psychology can offer, while those working in more social contexts probably need more knowledge of sociology, law, criminology, cultural anthropology, and environmental science. There is no Department of Psychology in the country that teaches about Maori culture to anywhere near the level that New Zealand psychologists need (Abbott & Durie, 1987).

It is also true that many of the skills that practitioners need are not to be found in abundance among academics at all. In our own programmes in clinical psychology, most of the teaching is done either by the overworked clinical staff or by outsiders, brought in to teach skills that academics do not possess. This is a further reflection of the gap between academic and clinical psychology.

If we are to develop real professional schools, we should also try to avoid some of the excesses that have befallen American psychology. The development of any profession is fraught with the danger that the needs of the professionals will take precedence over the needs of the public. My suspicion is that this has already happened in American psychology, and much of the most earnest discussion at the annual meetings of the American Psychological Association has to do with legal issues, or with insurance against malpractice suits, rather than with science. As my mirror-image of 1960 was surely aware, professional psychology should be directed toward helping others, not helping itself.

I do not really know the answers to the questions I have raised. I am sure, however, that psychology world-wide is at a crisis point. The gap between academic and professional psychology is widening, and even the divisions *within* both academic and professional psychology are growing wider. We can learn from what is happening in other countries, but we should also initiate our own discussions as to what we want psychology to be like in this country.

References

Abbott, M. W., & Durie, M. H. (1987). A white shade of pale: Taha Maori and professional psychology training. *New Zealand Journal of Psychology, 16,* 58-71.

Churchland, P. A. (1985). *Neurophilosophy.* Cambridge, MA: A Bradford Book, The MIT Press.

Corballis, M. C. (1988). Psychology's place in the science of the mind/brain: A review of *Neurophilosophy,* by Patricia A. Churchland. *Biology & Philosophy, 4,* 13-23.

Descartes, R. (1978). *A discourse on method, meditations on the first philosophy, principles of philosophy.* London: J.M. Dent & Sons. (Original work published in 1649).

Kihlstrom, J. F. (1987). The cognitive unconscious. *Science, 237,* 1445-1452.

Neisser, U. (1976). *Cognition and reality.* San Francisco: Freeman.

Searle, J. R. (1980). Minds, brains, and programs. *Behavioral & Brain Sciences, 3,* 417-461.

Turkle, S. (1984). *The second self: Computers and the human spirit.* New York: Simon & Shuster.

Weizenbaum, J. (1966). ELIZA — A computer program for the study of natural language communication between man and machine. *Communication Associates Computing Machinery, 9,* 36-45.